WHAT IS CLAIMED IS:

1. A method for searching a base station in a mobile communications system, in which a mobile station acquires slot timing synchronization from a first signal on a primary sync channel (P-SCH) out of the primary sync channel and a secondary sync channel (S-SCH) used for the base station search, acquires frame timing synchronization from a second signal on the S-SCH, and determines a primary scrambling code group (PSCG) corresponding to the primary scrambling codes used by the respective base stations, the method comprising the steps of:

calculating S-SCH channel received signal strength indicator (RSSI) values from the second signal at every slot in one frame, and updating S-SCH RSSI values corresponding to the one frame as energy matrix values;

calculating energy hypotheses corresponding to the energy matrix values using the energy matrix values and a predetermined secondary sync code (SSC) table in response to a first search command, and determining energy hypotheses having a value higher than a predetermined threshold as passed hypotheses; and

calculating energy values for the passed hypotheses using the determined passed hypotheses and the SSC table in response to a second search command, and determining an energy hypothesis having a maximum energy as the frame timing synchronization and the primary scrambling code group.

2. The method as claimed in claim 1, further comprising the steps of:

calculating and accumulating P-SCH RSSI values from the first signal at every slot; and

comparing the accumulated P-SCH RSSI values with first and second accumulation thresholds and providing the first and second search commands.

3. A method for searching a base station in a mobile communications system, in which a mobile station acquires slot timing synchronization from a first signal on a primary sync channel (P-SCH) out of the primary sync channel and a secondary sync channel (S-SCH) used for the base station search, acquires frame timing synchronization from a second signal on the S-SCH, and determines a primary scrambling code group (PSCG) corresponding to the primary scrambling codes used by the respective base stations, the method comprising the steps of:

calculating and accumulating P-SCH RSSI values from the first signal at every slot;

comparing the accumulated P-SCH RSSI values with first and second accumulation thresholds and providing first and second search commands;

calculating S-SCH RSSI values from the second signal at every slot and updating S-SCH RSSI values corresponding to the one frame as energy matrix values;

calculating energy hypotheses corresponding to the energy matrix values using the energy matrix values and a predetermined SSC table in response to the first search command, and determining energy hypotheses having a value higher than a predetermined threshold as passed hypotheses; and

calculating energy values for the passed hypotheses using the determined passed hypotheses and the SSC table in response to the second search command, and determining an energy hypothesis having a maximum energy as the frame timing synchronization and the primary scrambling code group.

4. An apparatus for searching a base station in a mobile communications system, in which a mobile station acquires slot timing synchronization from a first signal on a primary sync channel (P-SCH) out of the primary sync channel and a secondary sync channel (S-SCH) used for the base station search, acquires frame timing synchronization (Fsync) from a second

signal on the S-SCH, and determines a primary scrambling code group (PSCG) corresponding to the primary scrambling codes used by the respective base stations, the apparatus comprising:

a secondary sync channel signal energy calculating and updating part for calculating S-SCH RSSI values from the second signal at every slot in one frame, and updating S-SCH RSSI values corresponding to the one frame as energy matrix values;

a search command provider for calculating and accumulating P-SCH RSSI values from the first signal at every slot, comparing the accumulated P-SCH RSSI values with first and second accumulation thresholds, and providing first and second search commands; and

a secondary sync channel (S-SCH) searcher for performing a first search process of calculating energy hypotheses corresponding to the energy matrix values using the energy matrix values and a predetermined SSC table in response to the first search command and determining energy hypotheses having a value higher than a predetermined threshold as passed hypotheses, and a second search process of calculating energy values for the passed hypotheses using the determined passed hypotheses and the SSC table in response to the second search command and determining an energy hypothesis having a maximum energy as the frame timing synchronization and the primary scrambling code group.

5. The apparatus as claimed in claim 4, wherein the search command provider comprises:

a P-SCH RSSI calculator for calculating P-SCH RSSI values from the first signal at every slot;

a P-SCH accumulator for accumulating the calculated P-SCH RSSI values; and

a comparator for comparing the accumulated P-SCH RSSI values with the first and second accumulation thresholds and selectively providing the first

and second search commands to the S-SCH searcher.

6. A method for searching a base station in a mobile communications system, in which a mobile station acquires slot timing synchronization from a first signal on a primary sync channel (P-SCH) out of the primary sync channel and a secondary sync channel (S-SCH) used for the base station search, acquires frame timing synchronization from a second signal on the S-SCH, and determines a primary scrambling code group (PSCG) corresponding to the primary scrambling codes used by the respective base stations, the method comprising the steps of:

calculating received signal strength indicator (RSSI) values from the second signal at every slot in one frame having a plurality of slots, and updating the RSSI values corresponding to the one frame as energy matrix values;

calculating and accumulating received RSSI values from the first signal at every slot;

comparing the accumulated RSSI values with a predetermined accumulated threshold value and selectively providing a search command; and

calculating energy hypotheses corresponding to the plurality of RSSI values by using said RSSI values and a predetermined secondary synchronization code table in response to the search command and determining an energy hypothesis having a maximum energy among the calculated energy hypotheses as the frame timing synchronization and the primary scrambling code group.

7. An apparatus for searching a base station in a mobile communications system, in which a mobile station acquires slot timing synchronization from a first signal on a primary sync channel (P-SCH) out of the primary sync channel and a secondary sync channel (S-SCH) used for the base station search, acquires frame timing synchronization from a second signal on the S-SCH, and determines a primary scrambling code group (PSCG) corresponding

to the primary scrambling codes used by the respective base stations, the apparatus comprising:

a secondary sync channel signal energy calculating and updating part for calculating received signal strength indicator (RSSI) values from the second signal at every slot in one frame having a plurality of slots, and updating the RSSI values corresponding to the one frame as energy matrix values;

a search command provider for calculating and accumulating received RSSI values from the first signal at every slot, and comparing the accumulated RSSI values with a predetermined accumulated threshold value and selectively providing a search command; and

a secondary sync channel searcher for calculating energy hypotheses corresponding to the plurality of RSSI values by using said RSSI values and a predetermined secondary synchronization code table in response to the search command and determining an energy hypothesis having a maximum energy among the calculated energy hypotheses as the frame timing synchronization and the primary scrambling code group.